

Claims

What is claimed is:

1. An guidewire, comprising:
an atraumatic distal tip;
a proximal end;
an elongate core made from a thermoplastic rigid rod polymer, the core
extending from the atraumatic distal tip to the proximal end; and
a polymeric sheath disposed over the core.
2. The guidewire of claim 1, wherein the elongate core comprises a plurality
of long, flexible elements disposed in parallel.
3. A medical device comprising an elongate flexible element made from a
first polymer which is a thermoplastic rigid rod polymer.
4. The medical device of claim 3, wherein the first polymer comprises a
substituted poly(1,4-phenylene).
5. The medical device of claim 4, wherein the first polymer comprises a
plurality of benzoyl substituted 1,4-phenylene units.

6. The medical device of claim 3, wherein the first polymer has substantially the same molecular structure as a Parmax SRP polymer.

7. The medical device of claim 3, wherein the medical device is an intravascular guidewire.

8. The medical device of claim 7, wherein the elongate flexible element is a core wire.

9. The medical device of claim 8, wherein the core wire extends from a position proximate the proximal end of the guidewire to a position proximate the distal end of the guidewire.

10. The medical device of claim 8, wherein the core wire comprises a plurality of elongate longitudinally extending threads made from the polymer.

11. The medical device of claim 8, wherein a substantial length of the core wire has a circular cross sectional shape.

12. The medical device of claim 8, wherein a substantial length of the core wire has a rectangular cross sectional shape.

13. The medical device of claim 8, wherein a substantial length of the core wire has a cruciate cross sectional shape.

14. The medical device of claim 7, wherein the elongate flexible element is a sleeve extending over the core wire.

15. The medical device of claim 14, further comprising a second sleeve disposed on the first, the second sleeve made from the polymer.

16. The medical device of claim 14, wherein the sleeve is an extruded tube.

17. The medical device of claim 14, wherein the sleeve is a coil.

18. The medical device of claim 17, wherein the sleeve is formed from a wound flat tape.

19. The medical device of claim 14, wherein the sleeve is a mesh.

20. The medical device of claim 14, wherein the sleeve is a weave.

21. The medical device of claim 3, wherein the medical device is a catheter.

22. The medical device of claim 21, wherein the flexible elongate member is a sleeve.

23. The medical device of claim 22, further comprising a second sleeve disposed on the first, the second sleeve made from the polymer.

24. The medical device of claim 22, wherein the sleeve is an extruded tube.

25. The medical device of claim 22, wherein the sleeve is a coil.

26. The medical device of claim 25, wherein the sleeve is formed from a wound flat tape.

27. The medical device of claim 22, wherein the sleeve is a mesh.

28. The medical device of claim 22, wherein the sleeve is a weave.

29. The medical device of claim 22, further comprising an inner sleeve and an outer sleeve, the flexible elongate member comprising a plurality of elongate threads disposed between the inner sleeve and the outer sleeve.

30. The medical device of claim 3, wherein the elongate flexible element comprises a blend of the first polymer and a second polymer.

31. The medical device of claim 3, wherein the medical device comprises a second polymer, wherein the first polymer is not cross-linked and the second polymer is cross-linked.

32. The medical device of claim 3, wherein the medical device comprises a balloon.

33. The medical device of claim 32, wherein the elongate flexible element is a balloon sleeve.

34. The medical device of claim 33, wherein the balloon sleeve comprises a second polymer.

35. The medical device of claim 34, wherein the first polymer and the second polymer are blended.

36. The medical device of claim 34, wherein the first polymer and the second polymer are coextruded.

37. The medical device of claim 34, wherein the first polymer is in a first layer and the second polymer is in a second layer.

38. The medical device of claim 37, wherein the first layer has a distal varying thickness to create a first region having a first compliance and a second region having a second compliance less than the first compliance.

39. The medical device of claim 34, wherein the first polymer comprises a mesh or weave disposed in a layer comprising the second polymer.

40. The medical device of claim 34, wherein the first polymer is not cross-linked and the second polymer is cross-linked.

41. The medical device of claim 33, wherein the medical device is an intravascular balloon catheter and the balloon sleeve has a thickness of 0.25 to 5.0 mil.

42. The medical device of claim 41, wherein the balloon sleeve has a thickness of 0.3 to 1.0 mil.

43. The medical device of claim 3, wherein the elongate member comprises a plurality of struts forming a stent.

44. The medical device of claim 43, wherein the stent is a self-expanding stent.

45. The medical device of claim 43, wherein the stent further comprises a hydrogel coating.

46. The medical device of claim 45, wherein the hydrogel coating includes a therapeutic agent.

47. The medical device of claim 3, wherein the elongate member comprises a paramagnetic materials.

48. The medical device of claim 47, wherein the paramagnetic material is gadolinium (III).

49. The medical device of claim 3, further comprising a lubricous sheath disposed around the elongate member.

50. The medical device of claim 48, wherein the lubricious sheath comprises a hydrogel polymer.

51. A medical device comprising a flexible elongate element, the flexible elongate element formed by the process comprising the steps of:

providing a first polymer comprising a thermoplastic rigid rod polymer;

providing a second polymer compatible with the first;

co-extruding the first polymer with the second polymer;

not cross-linking the first polymer while cross-linking the second polymer.

52. The medical device of claim 51, wherein the flexible elongate element is formed by a process further comprising the step of cross-linking the second polymer.